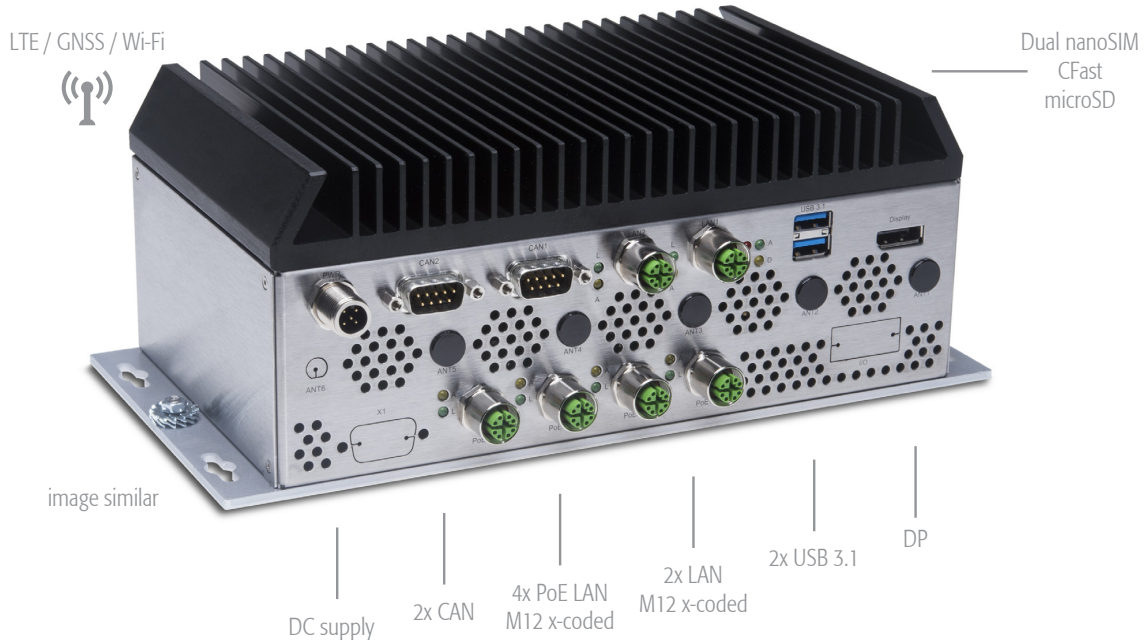


AI Vehicle Computer

COMPACT AI Vehicle Series

Computer Vision Edge Unit with NVIDIA Jetson AGX Xavier



AI Vehicle Computer

IPC/COMPACT A3 - RML

This fanless RML COMPACT-A3 generation is based on the Jetson AGX Xavier processor module and offers a wide range of interface options.

The robust and uncompromising industrial design allows the implementation in the most demanding mobile AI applications and guarantees long term availability.

- Power over Ethernet (PoE+), 48VDC out
- 24/7 continuous operation
- Extended AI Computing
- Passively cooled, no moving parts
- Long term availability with fixed BOM

NVIDIA
Linux for Tegra (L4T)



Product Highlights

UNECE-R10 (E-mark) certified
Positioning capabilities with dead reckoning
Power ignition controller
Each LAN interface has its own dedicated NIC
Shock and vibration resistant
LTE and Wi-Fi connectivity options
No moving parts / passively cooled

Product Features

512-Core NVIDIA Volta™ GPU
with 64 Tensor Cores
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU
32GB 256-Bit LPDDR4x RAM soldered on board
Storage options: NVMe M.2 2280 & CFast
Ethernet, USB, CAN (J1939)
LTE, GNSS and WiFi
Aluminum & stainless steel housing

Industries

Automotive
Transportation
Autonomous Mobile Robots (AMRs)
Robotics
Off-highway vehicles

Order Code IPC/RMLA3K22-A206S¹ IPC/RMLA3K22-D203S¹

Processor module / Performance

NVIDIA Jetson AGX Xavier (32GB) | 512-Core NVIDIA Volta™ GPU with 64 Tensor Cores
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU

AI Performance 32 TOPs 32 TOPs

Memory / Storage

Data L3 Cache Size	4MB	4MB
256-Bit LPDDR4x RAM soldered on board	32GB	32GB
eMMC 5.1 Flash Storage on board	32GB	32GB
microSD Card socket	1	1
M.2 2280 Key M socket (for NVMe SSD) ²	1	1
CFlash socket with retention frame ²	1	1

Features

Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR	on request	on request
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)	•	•

Communication Interfaces

Graphic interface	DisplayPort 1.2	DisplayPort 1.2
USB version 3.1 (10 Gbit/s) (Type A)	2	2
Internal USB version 2.0 OTG behind the cover (micro USB Type AB)	1	1
Ethernet 10/100/1000 BASE-T (M12 female x-coded)	2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated (DSUB9)	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit (M12 female x-coded)	4	4
PSE - Power sourcing equipment, producing 48VDC out (total max power: 39W)	(total max power: 39W)	(total max power: 39W)
Serial RS232 / RS422/RS485 (DSUB9)	optional	none
Digital I/O's, 24VDC (up to 4 inputs & 4 outputs)	optional	none
Analog input, 16bit resolution, voltage input: -10 ... +10V / 0 ... 30V Accuracy: +/- 0.1% (4 inputs)	optional	none
Analog input, 16bit resolution, current: 0-20mA (4 inputs)	optional	none
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface ¹	on request	on request

Wireless Connectivity

Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WWXX ⁶ (Dual nano SIM support)	3x SMA	none
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 Emvicon WMX6218 ⁶	2x RP-SMA	none
High Accuracy GNSS Positioning Module w/ RTK & optional heading support ¹ u-blox ZED F9R / F9P	on request	none

Technical Data

Dimensions [mm] (housing, incl. mounting plate)	w256 x h95 x d127	w256 x h95 x d127
Net weight [gram]	~2800	~2750
Non isolated input voltage with ignition controller and reverse polarity protection (M12 5P male a-coded)	9 ... 45VDC	9 ... 45VDC
Power consumption ³	depends on power mode (15W, 30W, MAXN)	

Environmental Conditions

Operating temperature ³	-25°C ... +60°C	-25°C ... +60°C
Storage temperature	-25°C ... +80°C	-25°C ... +80°C
Ingress protection standard according to EN60529 (ISO 20653)	IP20	IP20
Conformal coating ⁴	on request	on request
Road vehicles ⁵	UNECE-R10 (E-mark)	on request
Shock	EN60068-2-27	EN60068-2-27
Vibration	EN60068-2-64	EN60068-2-64
EMI-Conformity	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery	~280 000h	~355 000h

¹Please contact factory for minimum order quantities

²Internal connector

³Depending on installation situation, interface connection and power mode. Please see user documentation.

⁴On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)

⁵UN/ECE-R10 is the type-approval test for European automotive electronics. It includes a variety of testing including RF immunity and emissions, transient immunity and emissions.

⁶These LTE and Wi-Fi modules have replaced the previously used Sierra Wireless MC7455 and SparkLAN WPEB-263ACNI(BT) due to these modules going EOL (previous products: IPC/RMLA3K22-A203S)

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Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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